National Aeronautics and Space Administration

STRATEGIC ALIGNMENT OF YOUR RESEARCH INTEREST TO SBIR/STTR SUBTOPICS

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SUGGESTED STRATEGIES FOR POTENTIAL PROPOSERS

- Understand how your expertise can address NASA's technology needs
- Review previous solicitations
- Properly plan your proposal development process
- When the new solicitation is released, review it thoroughly
- Establish relationships with small businesses
- Make sure your proposal is compliant with the solicitation
- Work on your commercialization plan while your proposed idea is incubating

TYPICAL SBIR ATTRIBUTES

- **Technology Description and Objective:** Description of technology to be developed, advances they expect to make and advantages it will have over competing technologies
- **Assessment of Proposal:** Access feasibility of technical approach and work plan, qualifications of staff and facilities, dependence on subcontractors and any other concerns
- **Technology Readiness Level**: entry TRL, exit TRL
- **Attributes:**
  - **NASA Applications:** NASA Programs/Missions that may use as well as managers who will advocate for this technology, if any
  - **Deliverables:** Prototypes, test results, demonstrations, etc.

IMPORTANT CONSIDERATIONS

- Program does not fund market research, routine engineering development of existing products, proven concepts, or modifications of existing products that do not provide innovative changes
- Selection preference will be given to proposals where the innovations are judged to have significant potential for infusion or Phase III application

UNDERSTANDING NASA NEEDS

- Visit each of the NASA centers website
  - Learn what each of the centers are currently working on
- Visit each Mission Directorate website
  - Learn what projects and programs each mission directorate is supporting
  - Remember that programs/projects are your future customers … so Target them
- Visit the Office of Technology website
  - Learn what technology is being researched
- Visit the SBIR website
  - Become familiar with past solicitation
  - Learn what types of topics and subtopics NASA is looking for help in
  - Visit http://sbir.nasa.gov

REVIEW PREVIOUS SOLICITATIONS AT THE NASA SBIR WEBSITE

Select "Solicitation"

National Aeronautics and Space Administration

sbir.nasa.gov/solicitations

TA NASA

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Solicitations

The SBIR and STTR Solicitations are produced annually in partnership with NASA's Mission Directorates and Centers to focus on the Agency's priority mission needs. These needs are organized under topics and subtopics within the Solicitation. Solicitations for both programs are available online only.

Open and previous Solicitations are accessible below:

RECENT

FY 2016 SBIR/STTR Solicitation

Open from November 12, 2015 to February 01, 2016

Selections scheduled to be announced on April 28, 2016

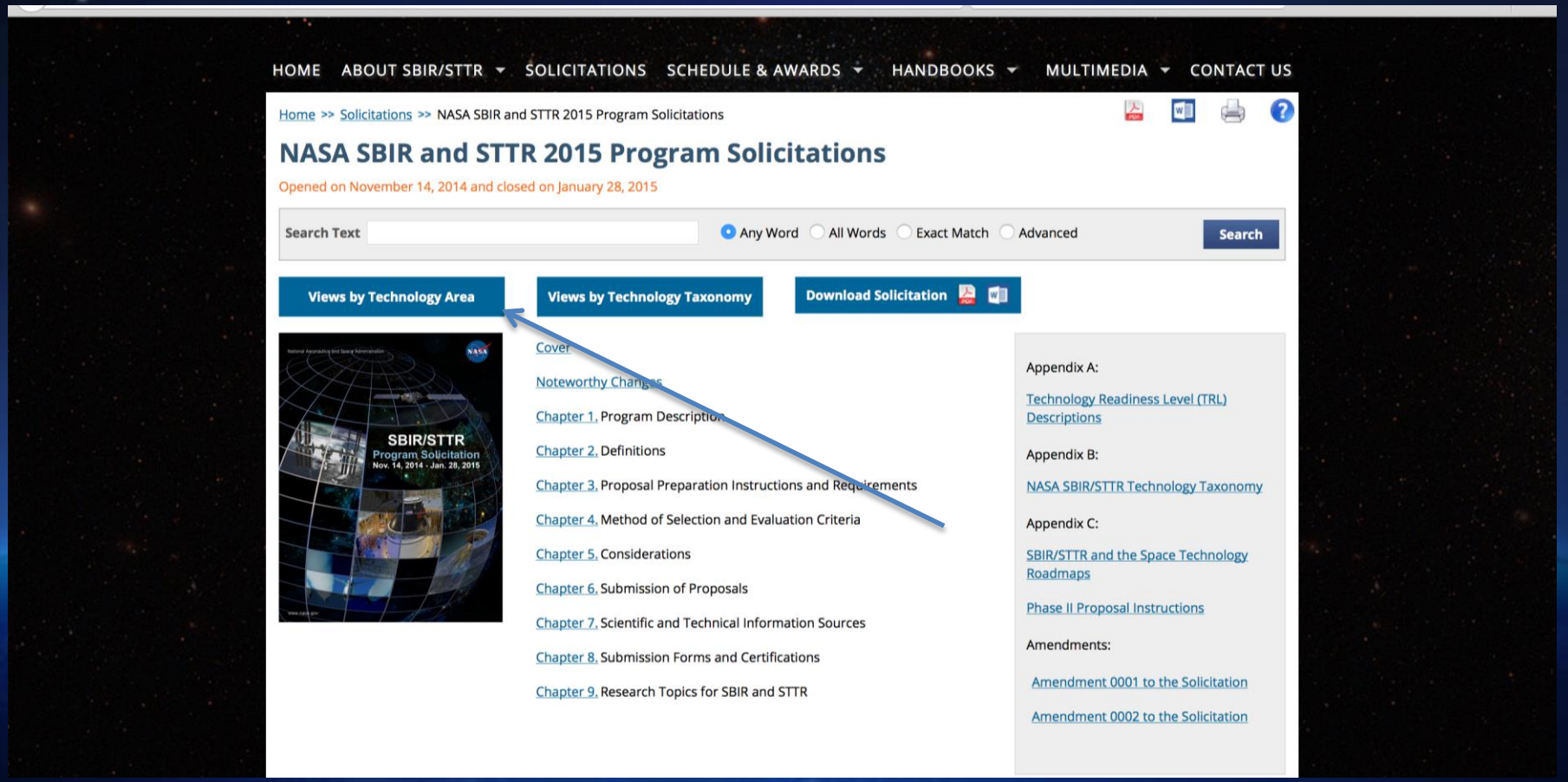
Subscribe to the NASA SBIR/STTR Newsletter, The Concept, to receive information on upcoming Solicitation dates and other NASA SBIR/STTR news.

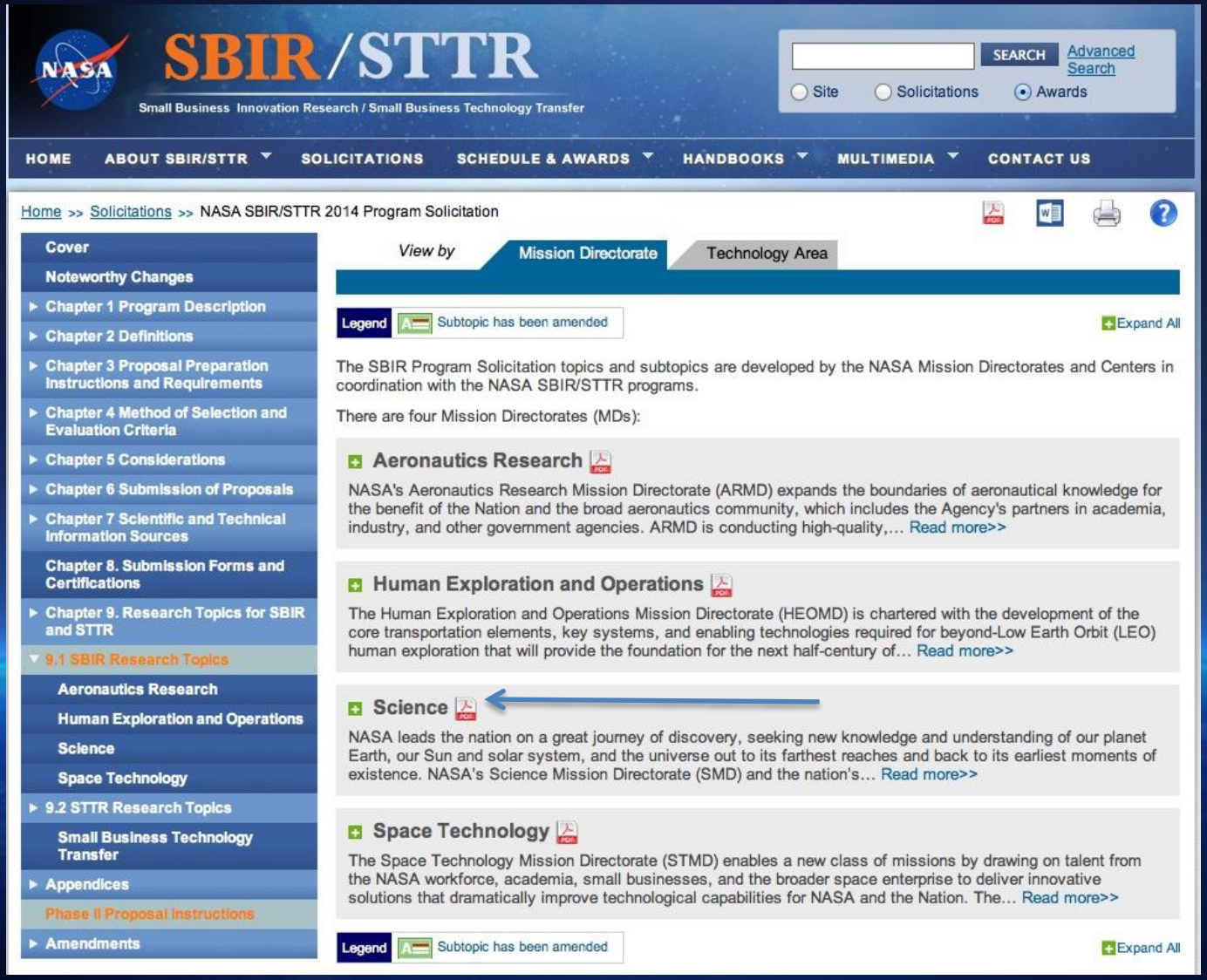
Previous Solicitations

- 2015 SBIR/STTR
- 2015 SBIR Select
- 2014 SBIR/STTR
- 2014 SBIR Select
- 2012 SBIR Select
- 2012 SBIR/STTR
- 2011 SBIR/STTR
- 2010 SBIR/STTR
- 2009 SBIR/STTR
- 2008 SBIR/STTR
- 2007 SBIR/STTR
- 2006 SBIR/STTR
- 2005 SBIR/STTR
- 2004 SBIR/STTR

Select the Solicitation of interest

SUBTOPICS BY MISSION DIRECTORATE

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Small Business Innovation Research / Small Business Technology Transfer
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Home >> Solicitations >> NASA SBIR/STTR 2014 Program Solicitation
Cover
Noteworthy Changes
Chapter 1 Program Description
Chapter 2 Definitions
Chapter 3 Proposal Preparation Instructions and Requirements
Chapter 4 Method of Selection and Evaluation Criteria
Chapter 5 Considerations
Chapter 6 Submission of Proposals
Chapter 7 Scientific and Technical Information Sources
Chapter 8. Submission Forms and Certifications
Chapter 9. Research Topics for SBIR and STTR
9.1 SBIR Research Topics
Aeronautics Research
Human Exploration and Operations
Science
Space Technology
9.2 STTR Research Topics
Small Business Technology Transfer
Appendices
Phase II Proposal Instructions
Amendments
View by
Mission Directorate
Technology Area
Legend
Subtopic has been amended
Expand All
The SBIR Program Solicitation topics and subtopics are developed by the NASA Mission Directorates and Centers in coordination with the NASA SBIR/STTR programs.
There are four Mission Directorates (MDs):
Aeronautics Research
NASA's Aeronautics Research Mission Directorate (ARMD) expands the boundaries of aeronautical knowledge for the benefit of the Nation and the broad aeronautics community, which includes the Agency's partners in academia, industry, and other government agencies. ARMD is conducting high-quality,... Read more>>
Human Exploration and Operations
The Human Exploration and Operations Mission Directorate (HEOMD) is chartered with the development of the core transportation elements, key systems, and enabling technologies required for beyond-Low Earth Orbit (LEO) human exploration that will provide the foundation for the next half-century of... Read more>>
Science
NASA leads the nation on a great journey of discovery, seeking new knowledge and understanding of our planet Earth, our Sun and solar system, and the universe out to its farthest reaches and back to its earliest moments of existence. NASA's Science Mission Directorate (SMD) and the nation's... Read more>>
Space Technology
The Space Technology Mission Directorate (STMD) enables a new class of missions by drawing on talent from the NASA workforce, academia, small businesses, and the broader space enterprise to deliver innovative solutions that dramatically improve technological capabilities for NASA and the Nation. The... Read more>>
Legend
Subtopic has been amended
Expand All

EXAMPLE: 2015 SMD SBIR SUBTOPICS

TOPIC S1 Sensors, Detectors, and Instruments

- **S1.01** Lidar Remote Sensing Technologies
- **S1.02** Microwave Technologies for Remote Sensing
- **S1.03** Sensor and Detector Technology for Visible, IR, Far IR and Submillimeter
- **S1.04** Detector Technologies for UV, X-Ray, Gamma-Ray and Cosmic-Ray Instruments
- **S1.05** Particles and Field Sensors and Instrument Enabling Technologies
- **S1.06** In Situ Sensors and Sensor Systems for Lunar and Planetary Science
- **S1.07** Airborne Measurement Systems
- **S1.08** Surface & Sub-surface Measurement Systems
- **S1.09** Atomic Interferometry
- **S1.10** Cryogenic Systems for Sensors and Detectors

TOPIC S2 Advanced Telescope Systems

- **S2.01** Proximity Glare Suppression for Astronomical Coronagraphy
- **S2.02** Precision Deployable Optical Structures and Metrology
- **S2.03** Advanced Optical Systems and Fabrication/Testing/Control Technologies for EUV/Optical and IR Telescope
- **S2.04** X-Ray Mirror Systems Technology, Coating Technology for X-Ray-UV-OIR, and Free-Form Optics

TOPIC S3 Spacecraft and Platform Subsystems

- **S3.01** Power Generation and Conversion
- **S3.02** Propulsion Systems for Robotic Science Missions
- **S3.03** Power Electronics and Management, and Energy Storage
- **S3.04** Unmanned Aircraft and Sounding Rocket Technologies
- **S3.05** Guidance, Navigation and Control
- **S3.06** Terrestrial and Planetary Balloons
- **S3.07** Thermal Control Systems
- **S3.08** Slow and Fast Light
- **S3.09** Command, Data Handling and Electronics

TOPIC S4 Robotic Exploration Technologies

- **S4.01** Planetary Entry, Descent and Landing and Small Body Proximity Operation Technology
- **S4.02** Robotic Mobility, Manipulation and Sampling
- **S4.03** Spacecraft Technology for Sample Return Missions
- **S4.04** Extreme Environments Technology
- **S4.05** Contamination Control and Planetary Protection

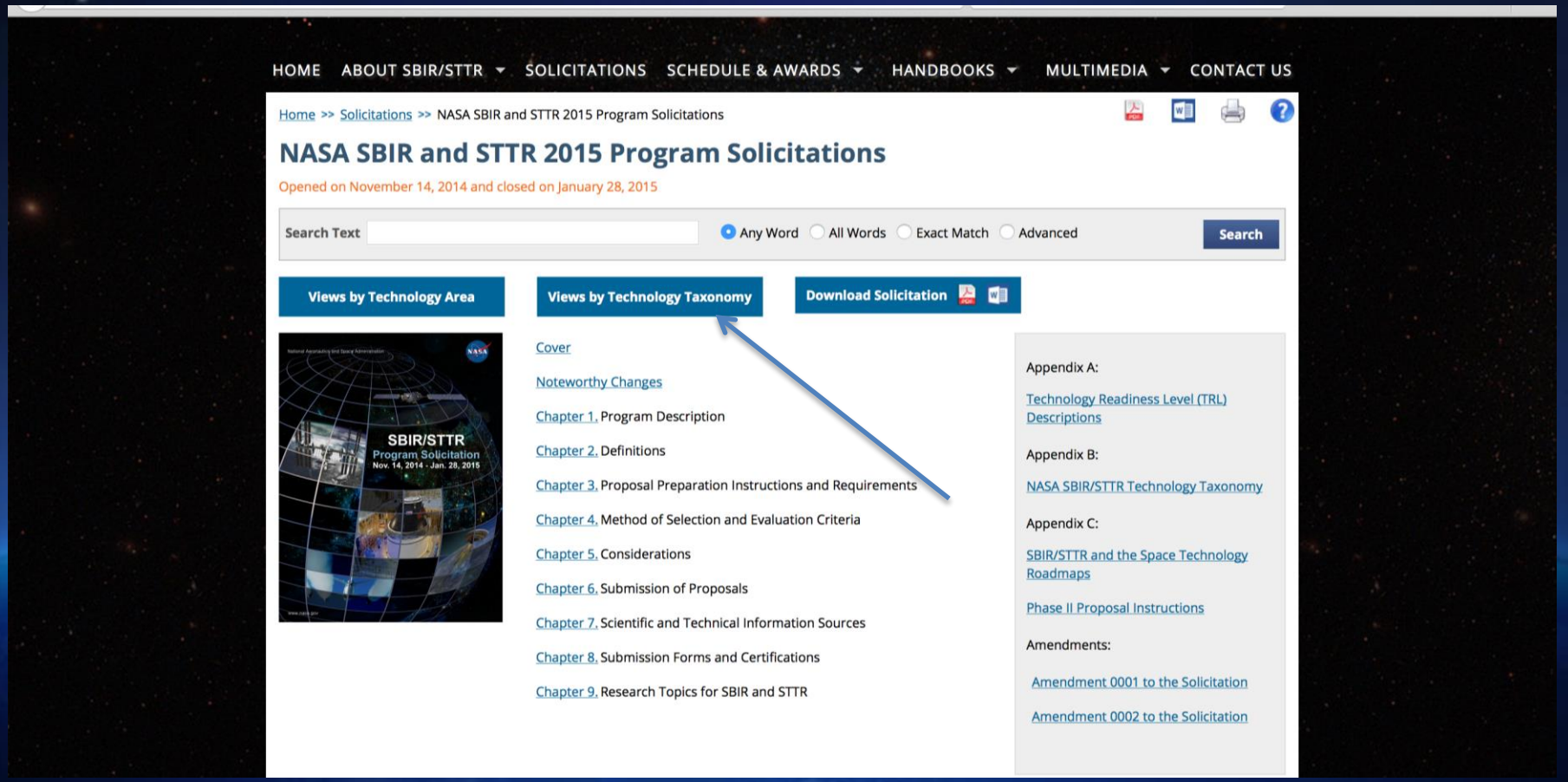
TOPIC S5 Information Technologies

- **S5.01** Technologies for Large-Scale Numerical Simulation
- **S5.02** Earth Science Applied Research and Decision Support
- **S5.03** Algorithms and Tools for Science Data Processing, Discovery and Analysis, in State-of-the-Art Data Environments
- **S5.04** Integrated Science Mission Modeling
- **S5.05** Fault Management Technologies

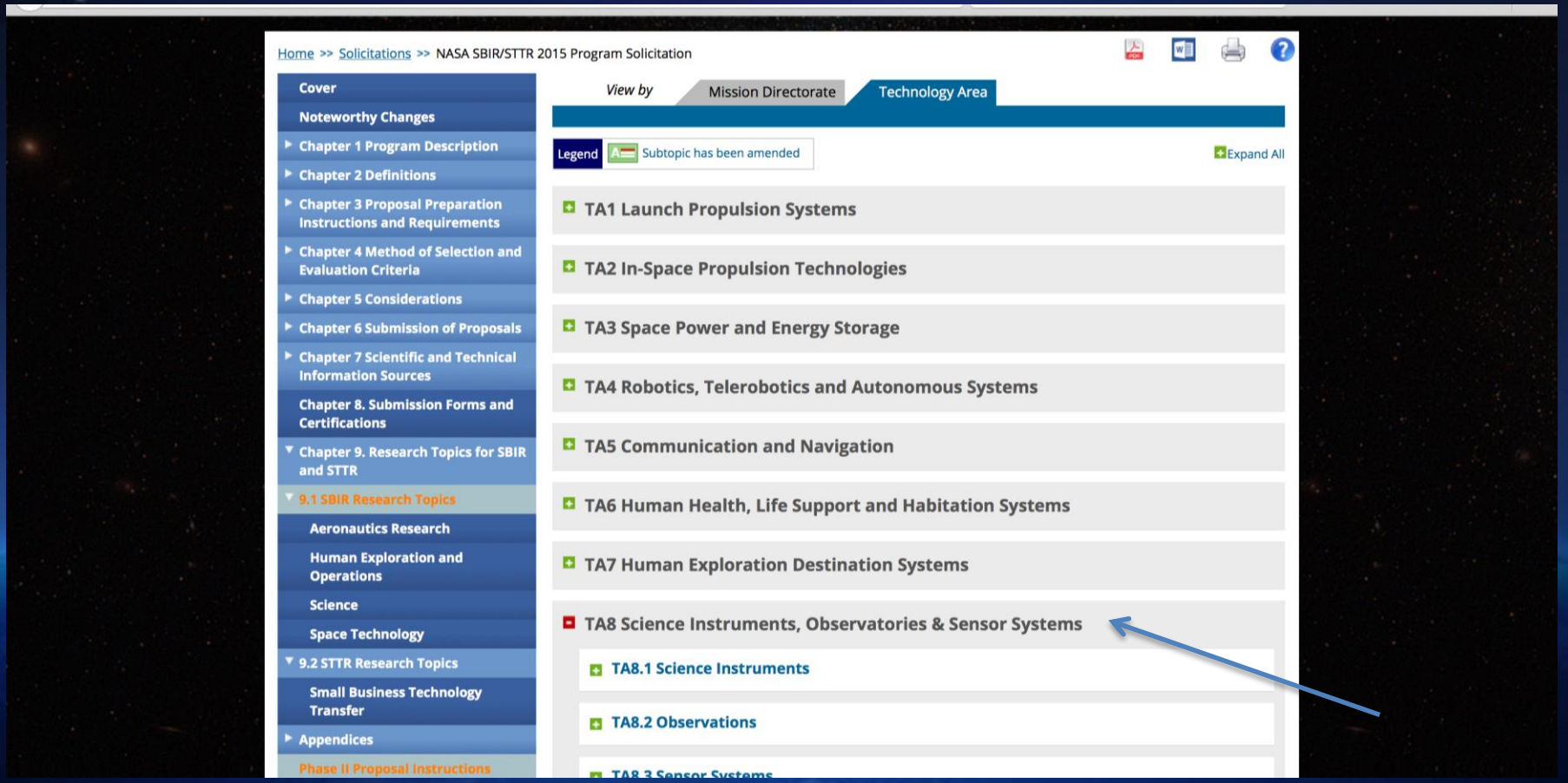
TOPIC S20 SMD Select Topics *

- **S20.01** Novel Spectroscopy Technology and Instrumentation
- **S20.02** Advanced Technology Telescope for Balloon and Sub-Orbital Missions

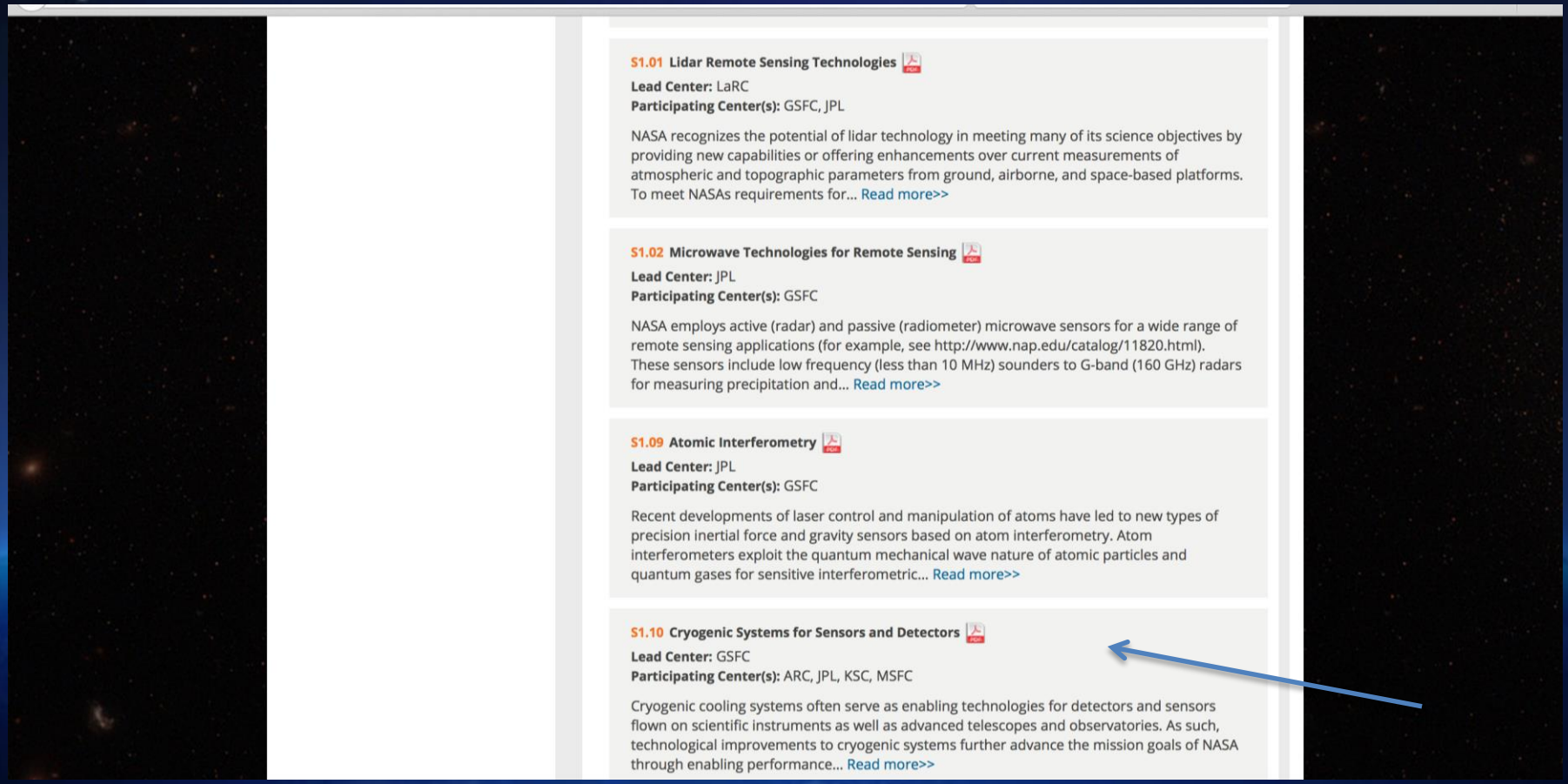
SUBTOPICS BY TECHNOLOGY AREA



SUBTOPICS BY TECHNOLOGY AREA



SUBTOPICS BY TECHNOLOGY AREA



S1.01 Lidar Remote Sensing Technologies

Lead Center: LaRC
Participating Center(s): GSFC, JPL

NASA recognizes the potential of lidar technology in meeting many of its science objectives by providing new capabilities or offering enhancements over current measurements of atmospheric and topographic parameters from ground, airborne, and space-based platforms. To meet NASAs requirements for... Read more>>

S1.02 Microwave Technologies for Remote Sensing

Lead Center: JPL
Participating Center(s): GSFC

NASA employs active (radar) and passive (radiometer) microwave sensors for a wide range of remote sensing applications (for example, see http://www.nap.edu/catalog/11820.html). These sensors include low frequency (less than 10 MHz) sounders to G-band (160 GHz) radars for measuring precipitation and... Read more>>

S1.09 Atomic Interferometry

Lead Center: JPL
Participating Center(s): GSFC

Recent developments of laser control and manipulation of atoms have led to new types of precision inertial force and gravity sensors based on atom interferometry. Atom interferometers exploit the quantum mechanical wave nature of atomic particles and quantum gases for sensitive interferometric... Read more>>

S1.10 Cryogenic Systems for Sensors and Detectors

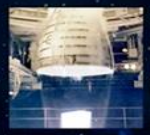
Lead Center: GSFC
Participating Center(s): ARC, JPL, KSC, MSFC

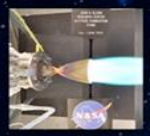
Cryogenic cooling systems often serve as enabling technologies for detectors and sensors flown on scientific instruments as well as advanced telescopes and observatories. As such, technological improvements to cryogenic systems further advance the mission goals of NASA through enabling performance... Read more>>

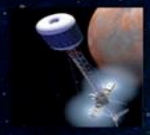
National Aeronautics and Space Administration

UNDERSTANDING HOW YOUR EXPERTISE CAN ADDRESS NASA'S TECHNOLOGY NEEDS

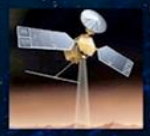
SPACE TECHNOLOGY TECHNICAL AREAS

TA 1  LAUNCH PROPULSION SYSTEMS

TA 2  IN-SPACE PROPULSION TECHNOLOGIES

TA 3  SPACE POWER AND ENERGY STORAGE

TA 4  ROBOTICS AND AUTONOMOUS SYSTEMS

TA 5  COMMUNICATIONS, NAVIGATION, AND ORBITAL DEBRIS TRACKING AND CHARACTERIZATION SYSTEMS

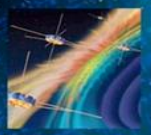
TA 6  HUMAN HEALTH, LIFE SUPPORT, AND HABITATION SYSTEMS

TA 7  HUMAN EXPLORATION DESTINATION SYSTEMS

TA 8  SCIENCE INSTRUMENTS, OBSERVATORIES, AND SENSOR SYSTEMS

TA 9  ENTRY, DESCENT, AND LANDING SYSTEMS

TA 10  NANOTECHNOLOGY

TA 11  MODELING, SIMULATION, INFORMATION TECHNOLOGY, AND PROCESSING

TA 12  MATERIALS, STRUCTURES, MECHANICAL SYSTEMS, AND MANUFACTURING

TA 13  GROUND AND LAUNCH SYSTEMS

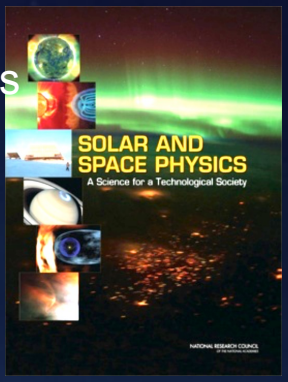
TA 14  THERMAL MANAGEMENT SYSTEMS

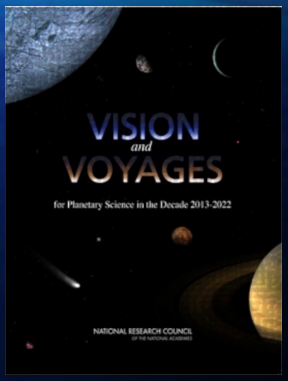
TA 15  AERONAUTICS

http://www.nasa.gov/offices/oct/home/roadmaps/index.html

UNDERSTANDING NASA NEEDS

- In Science – "Decadal Surveys" and NASA-developed implementation documents
  - Planetary Science
    - **http://solarsystem.nasa.gov/multimedia/download-detail.cfm?DL_ID=742**
  - Astronomy and Astrophysics
    - **http://science.nasa.gov/astrophysics/special-events/astro2010-astronomy-and-astrophysics-decadal-survey/**
    - **http://science.nasa.gov/media/medialibrary/2013/04/15/secure-ImpPlan_R2_15Apr2013.pdf**
  - Heliophysics (Solar and Space Physics)
    - **http://www.nap.edu/catalog.php?record_id=13060**
    - **http://www.nasa.gov/mission_pages/sunearth/news/decadal-2012.html**
    - **http://science.nasa.gov/media/medialibrary/2010/03/31/Heliophysics_Roadmap_2009_tagged-quads.pdf**
  - Earth Science
    - **http://science.nasa.gov/earth-science/decadal-surveys/**
    - **http://esto.nasa.gov/**
- In Aeronautics Research
  - National Aeronautics R&D Plan
    - **http://www.whitehouse.gov/sites/default/files/microsites/ostp/aero-rdplan-2010.pdf**
  - Various Detailed NASA Aeronautics Research documents
    - **http://www.aeronautics.nasa.gov/programs.htm**
- In Human Research Program
  - Human Research Roadmap
    - http://humanresearchroadmap.nasa.gov





National Aeronautics and Space Administration

PLANNING YOUR PROPOSAL DEVELOPMENT PROCESS

Overview

- Every technology development investment dollar is critical to the ultimate success of NASA's mission
  - Ensure alignment and integration with Mission Directorates' priorities
  - Ensure alignment and integration with the Office of the Chief Technology priorities
  - Keep in mind investments are complementary with technologies being pursued by
    - other NASA programs and projects
    - prime contractors
    - other agency SBIR/STTR investments
- Ultimate objective is to achieve infusion of critical technologies into NASA
  - flight programs/projects
  - ground or test systems
  - or other uses to advance NASA's mission

Overview (continued)

- Mission Directorates and the Chief Technologist establish high priority needs and existing gaps
  - High priority needs are developed into topics for the annual solicitation
  - Subtopics may be clustered to support the development and maturation of critical technologies for infusion

- NASA Centers are home to NASA's development projects, research facilities, and Subject Matter Experts and therefore play a critical role.

DIFFERENCE BETWEEN SBIR AND STTR

- SBIRs are led by the Mission Directorates
  - There are 4 mission directorates
    - Science (SMD), Human Exploration and Operation (HEOMD), Aeronautical Research (ARMD), and Space Technology (STMD)
- STTRs are led by the Office Chief Technology
  - Each NASA center (10 in total) has a chief technologist
  - Each chief technologist sits on the Chief Technologist Council
- The awards are always to a small business
  - In SBIR, a research institution, e.g. a university may participate with the small business
  - In STTR, a research institute must participate with the small business

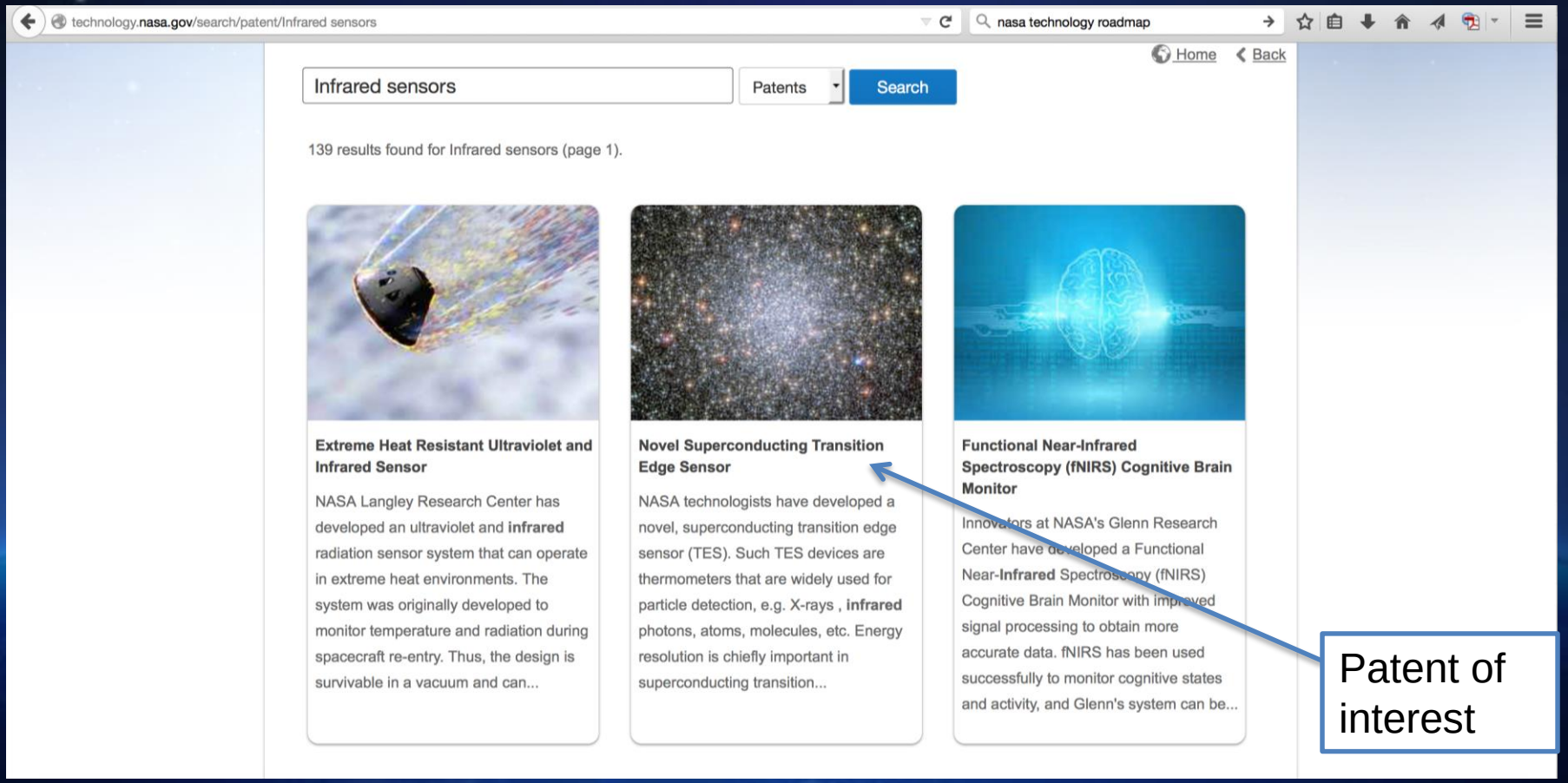
NASA TECHNOLOGY AVAILABLE (TAV) AND INTELLECTUAL PROPERTY (IP)

- NASA's IP and non-patented software is available for use during an SBIR/STTR performance period
- A non-exclusive, royalty free research license is available during the performance period
- Software identified and requested under a SBIR/STTR contract must request a Software Usage Agreement
- Increase private-sector commercialization of innovations derived from Federal research and development funding
- TAV and IP can be found at http://technology.nasa.gov

GAIN ACCESS TO NASA'S PATENTED TECHNOLOGY PORTFOLIO

SEARCH FOR EXISTING PATENTED TECHNOLOGIES

CONTACT A NASA TECHNOLOGY MANAGER TO DISCUSS LICENSING OR PARTNERSHIP OPTIONS



LASTLY…

- Contact only NASA SMEs about our SBIR/STTR programs during our “Open Season”
- Refer to online resources for general SBIR/STTR questions (SBIR.NASA.gov or SBIR.gov)
- Ask direct technical questions when you meet with a NASA Scientist/Engineer/Program Manager

QUESTIONS????